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A NEW SPECIES OF *AUSTRODECUS* (PYCNOGONIDA) FROM NEW SOUTH WALES, AUSTRALIA

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Austrodecus staplesi sp.n. is the first member of the genus described from continental Australia (New South Wales). The genus is mainly Gondwanian in its distribution, but for three species recorded from the western belt of the Pacific Ocean.

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Key words. – *Austrodecus*; Pycnogonida; New Species; New South Wales; biogeography.

The genus *Austrodecus* s.str. counts actually 24 named and 5 unnamed species (Stock 1957, 1968, Hedgpeth & McCain 1971, Clark 1972a, b, Child 1983, 1988, Pushkin 1977). The genus was briefly mentioned, without specific identification, in a popular paper by Staples (1977: 123) from 'southern Australian waters ... [where it] may be associated with the hydroid *Halicorniopsis elegans*'. With the exception of one dubious record of *A. glaciale* Hogdson, 1907, off Tasmania (see Gordon 1944: 6, Stock 1957: 46), there are no other Australian records, and as far as I know Staples' Australian material never has been formally described.

Through the courtesy of Dr. Harry A. ten Hove, Amsterdam, I received a single specimen, fortunately a male, of an *Austrodecus* collected on the coasts of New South Wales. It represents a new species, described in this paper.

Family AUSTRODECIDAE Stock, 1954
Genus **Austrodecus** Hodgson, 1907

Austrodecus staplesi sp.n.
(figs. 1-8)

Type material. – 1 ♂ (holotype), Australia, New South Wales, Split Solitary Island, near Coff's Harbour; depth 12-14 m; rocky area with small caves, some corals, algae and some sand; 26 Apr. 1986; leg. H. A. ten Hove, P. Hutchings & R. Phipps (Zoölogisch Museum Amsterdam Pa. 3322).

Description

Holotype ♂. – The new species belongs to the *gordonae*-section (Stock 1957) of the genus, characterized by a 4-segmented oviger and the absence of auxiliary claws.

Trunk (figs. 1-2) with 4 tall mid-dorsal spurs, one on each trunk segment. Ocular tubercle taller than trunk spurs, but rather plump; eyes well-pigmented. Less tall dorsal spurs on coxa 1 of legs 1 and 4 (1 spur), coxa 1 of legs 2 and 3 (2 spurs), and coxa 3 of legs 1 to 4 (1 spur). Abdomen (fig. 1) tuberculate, slightly overreaching coxa 3 of leg 4.

Palp (fig. 3) 5-segmented, segment 5 indistinctly subdivided, bifid (fig. 4). Oviger 4-segmented, 1 spine on segment 3, 2 median and 4 distal spines on segment 4 (fig. 5).

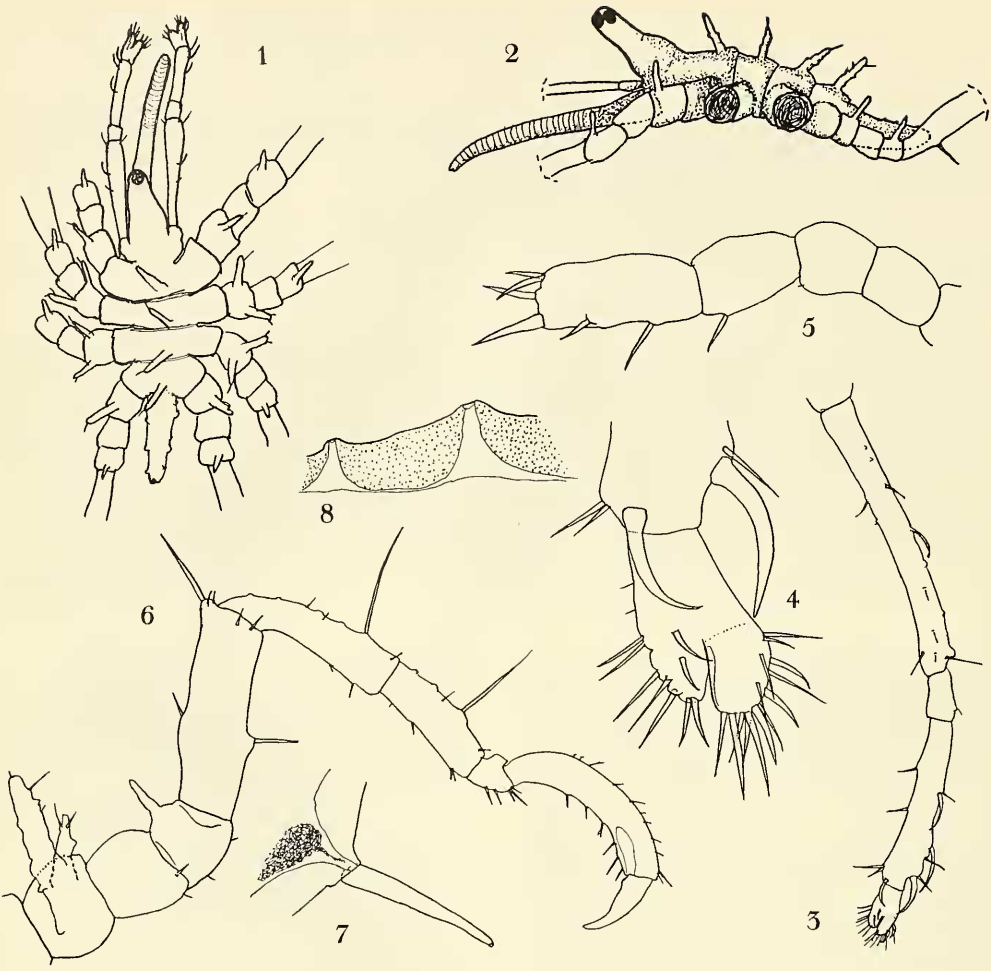
Legs (fig. 6) with a long dorsodistal seta on femur and tibiae 1 and 2. Femur longest segment. Femoral cement gland ventral, situated slightly before middle of segment; discharging through long duct (fig. 7). Other glands open through slightly raised pores (fig. 8) on dorsal surface of tibia 1 (4 pores) and tibia 2 (2 pores). Propodus strongly curved; sole with c. 6 spinules; no auxiliary claws. As far as I can ascertain, male genital pores situated on ventral surface of coxa 3 (!) of all (!) legs.

Measurements of holotype (in μm). – Length trunk (tip ocular tubercle to tip abdomen) 1556: length cephalic segment 653; width across 2nd lateral processes 539; length abdomen 406; length proboscis 1099.

Third leg: first coxa 144; second coxa 144; third coxa 101; femur 376; first tibia 264; second tibia 241; tarsus 49; propodus 269; claw 120.

Remarks

Within the *gordonae*-section, the new species



Figs. 1-8. *Austrodecus staplesi* n.sp., ♂ holotype. 1, body, dorsal; 2, body, from the left; 3, palp; 4, distal part of palp; 5, oviger; 6, third leg; 7, femoral cement gland; 8, gland apertures on dorsal surface of tibia 2 of leg 3.

differs from *A. frigorifugum* Stock, 1954, *A. stocki* Child, 1988, and *A. oblongum* Pushkin, 1977 (generic status of the latter uncertain because of aberrant shape of proboscis) in the absence of dorsodistal femoral spurs. *A. gordonae* Stock, 1954, has low mid-dorsal trunk tubercles, an almost straight and shorter propodus, and lacks a femoral cement gland tube. *A. palauense* Child, 1983 has a longer distal tubercle on palp segment 2, as well as tuberculate and widely separated lateral trunk processes; the oviger of this species is unknown.

As point of fact, only three species of *Austrodecus* share with the new species the presence of a tubiform cement gland aperture located in the middle part of the ventral surface of femur. Two of these, *A. aconae* (Hedgpeth & McCain, 1971), originally described as a species of *Pantopipetta*, and *A. kelpi* Pushin, 1977 differ from the new species in the absence or poor development of mid-dorsal trunk spurs, and in the axial implantation of the distal palp segment. The other species, *A. tubiferum* Stock, 1957, shows no doubt the greatest resemblance to the new species. *A. tubiferum* is known from Sagami Bay (Stock 1954, 1957) and Okinawa (Child 1988), and has a similar pattern of spurs on trunk and legs. The new species differs from *A. tubiferum* in having longer mid-dorsal trunk spurs, a more strongly curved propodus, a slightly different configuration of the distal palp segments, and less slender legs (especially on the level of tibia 2). The propodus of *A. tubiferum* is shorter than tibia 2, that of *A. staplesi* longer than tibia 2.

The new species differs from all other members

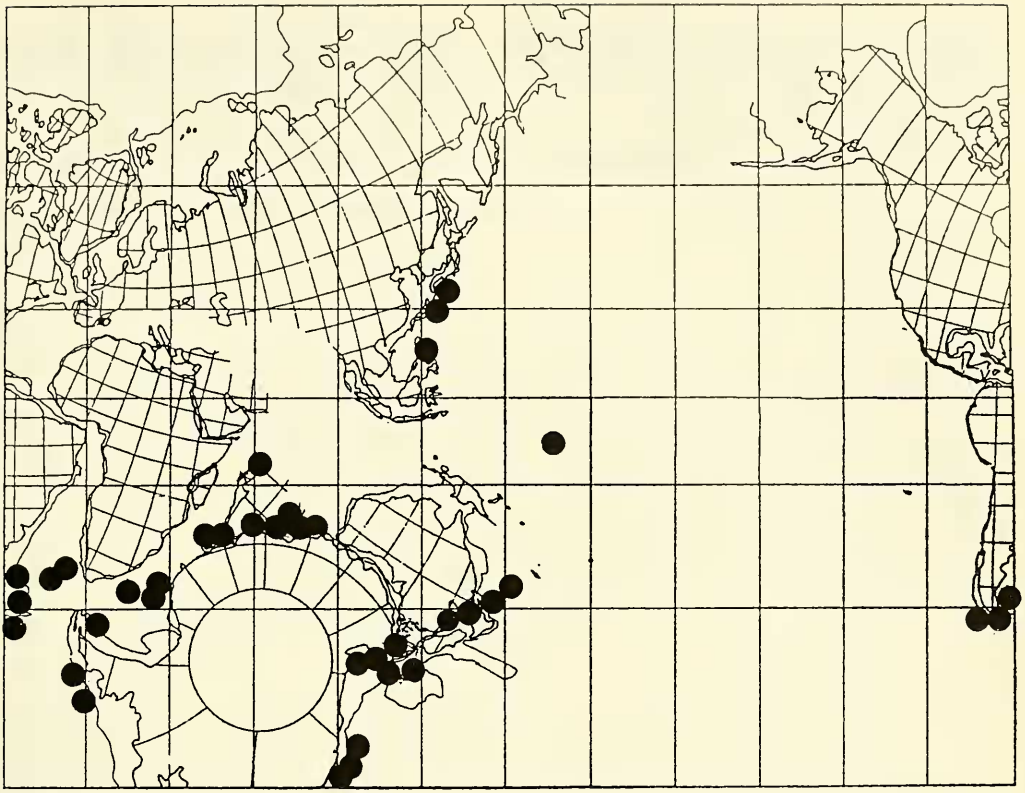


Fig. 9. Global reconstruction at 100 Ma B.P., after Smith & Briden, 1977. Dots indicate the actual distribution of the 24 named and 5 unnamed species of the genus *Austrodecus* (some species known from more than one locality, some localities with more than one species). With the exception of the Japanese, Palau and Kermadec records, the distribution is essentially Gondwanian.

of the genus in the combination of 4-segmented ovigers and lacking auxiliary claws.

Etymology

This species is dedicated to Mr. David Staples, of Melbourne, in recognition of his works on Australian Pycnogonida.

Biogeography

Child (1983: 699, 1988: 55) has suggested a 'western Indian Ocean corridor' and a 'western Pacific corridor' to explain the presence of *Austrodecus* species on Aldabra Atoll (Indian Ocean), and in warm or warm-temperate waters in the western Pacific (Kermadec Islands, Palau, Japan). Stock (1957: 24, fig. 10) presumed a relationship to the plate tectonics of the southern hemisphere land masses, long before plate drift was a fashionable subject. Fig. 9 shows that (when the distribution of *Austrodecus* is plotted on a late Mesozoic map of the continents), the genus is essentially Gondwanian, with extensions along the western margin of the Pacific Ocean.

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